2.1EN-39001-E09

Hydraulic Operated Lubrication Pump HTL 101

6131b03

Subject to modifications

810-55289-1

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For further information refer to:

- Installation Instructions for kit of seals 542-34079-1 2.0-30008-B08
- Installation Instructions for hose stud 2.0-39000-A08

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Introduction

Explanation of Symbols Used

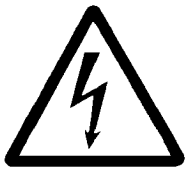
The following description standards are used in this manual:

Safety Instructions

Structure of safety instructions:

- Pictogram
- Signal word
- Danger text
  - Danger note
  - How to avoid danger

The following pictograms are used in this manual and are combined with the corresponding signal words:

		
1013A94	4273a00	6001a02
- ATTENTION **- CAUTION** **- WARNING**	**- ATTENTION** **- CAUTION** **- WARNING**	**- NOTE** **- IMPORTANT**

The signal words give the seriousness of danger if the following text is not observed:

ATTENTION	refers to faults or damages on machines.
CAUTION	refers to bad damages and possible injuries.
WARNING	refers to possible dangerous injuries.
NOTE	indicates improved operation of the device.
IMPORTANT	indicates special operating features of the device.

Example:

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ATTENTION!

When making use of other than the tested spare parts, serious damage may affect your device.

Therefore, for the operation of your device always use original parts made by Lincoln GmbH.

Furthermore, you will find the following text symbols in this manual:

- Listing of applicable statements
  - Subpoint of applicable statements

1. Determination of the number or sequence of contents

➲ Procedural instruction

User's Responsibility

To ensure the safe operation of the unit, the user is responsible for the following:

1. The pump / system shall be operated only for the intended use (see next chapter "Safety Instructions") and its design shall neither be modified nor transformed.
2. The pump / system shall be operated only if it is in a proper functioning condition and if it is operated in accordance with the maintenance requirements.
3. The operating personnel must be familiar with this Owner Manual and the safety instructions mentioned within and observe these carefully.

The correct installation and connection of tubes and hoses, if not specified by Lincoln GmbH, is the user's responsibility. Lincoln GmbH will gladly assist you with any questions pertaining to the installation.

Environmental Protection

Waste (e.g. used oil, detergents, lubricants) must be disposed of in accordance with relevant environmental regulations.

Service

The personnel responsible for the handling of the pump / system must be suitably qualified. If required, Lincoln GmbH offers you full service in the form of advice, on-site installation assistance, training, etc. We will be pleased to inform you about our possibilities to support you purposefully.
In the event of inquiries pertaining to maintenance, repairs and spare parts, we require model specific data to enable us to clearly identify the components of your pump / system. Therefore, always indicate the part, model and series number of your pump / system.

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Safety Instructions

Appropriate Use

The hydraulic operated lubrication pump model HTL 101 is designed for initial or for subsequent retrofit installation. It is designed for:

1. the automatic lubrication of hydraulic hammers;
2. the automatic lubrication of hydraulically driven units.

The pump is able to deliver lubricants and chisel pastes up to NLGI - class 2.

Misuse

Any use of the hydraulic operated lubrication pump HTL 101 that is not expressly mentioned in this user's manual will be regarded as misuse.
If the hydraulic operated lubrication pump HTL 101 is used or operated in a different manner other than specified, any claim for warranty or liability will be null and void.

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NOTE

If personal injury or material damage occurs as a result of inappropriate operation, e.g. if the safety instructions are ignored or resulting from incorrect installation of the hydraulic operated lubrication pump HTL 101, no claims or legal actions may be taken against Lincoln GmbH.

General Safety Instructions

- Hydraulic operated lubrication pumps model HTL 101:
  - are designed with state-of-the-art technology.
  - can be assembled for safe operation.
- Incorrect use may result in bearing damage caused by under- or over-lubrication.
- Modifications or alterations to an installed system by the customer are subject to prior consultation with the manufacturer of the lubrication system or with its appointed dealers.
- Hydraulic operated lubrication pumps model HTL 101:
  - are not to be installed in the lower area of the hammer,
  - must be installed in such a way that the operator can always see the position of the low-level indicator of the follower piston.
- After each cartridge replacement be sure that the pump delivers lubricant.

Accident Prevention Regulations

To prevent accidents, observe all city, state or provincial and federal safety regulations of the country in which the hydraulic operated lubrication pump HTL 101 will be used.

Operation, Maintenance and Repair

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ATTENTION!

Before beginning with maintenance or repair work to the lubrication pump HTL 101, ensure that the hydraulic system of the carrier unit (the supply to the lubrication pump) is depressurized.

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ATTENTION!

It is absolutely forbidden to carry out maintenance or repair work and to replace the cartridge while the hydraulic unit is in operation.

Repairs

Repairs are only to be performed by authorized and qualified persons who are familiar with all applicable regulations.

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Safety Instructions, continuation

Operation, Maintenance and Repair, continuation

Operation / Maintenance

Hydraulic operated lubrication pumps HTL 101

- shall be operated only with an installed pressure relief valve
- shall regularly be supplied with clean lubricant cartridges
- operate automatically. However, check at regular intervals (approx. every 2 days) whether the pump effectively delivers lubricant (visual check)

Disposal

Dispose of used or contaminated lubricants as well as of parts that were in touch with lubricant (e.g. emptied cartridges) according to the legal regulations pertaining to environmental protection.

Exclusion of Liability

The manufacturer of the lubrication pump HTL 101 does not accept any liability for damages caused by:

- tardy replacement of the cartridges (lack of lubricant)
- contaminated lubricants
- use of lubricants that are inappropriate or only conditionally appropriate for the unit or which are not pumpable
- inappropriate disposal of used or contaminated lubricants
- arbitrary modification of system parts
- use of unauthorized spare parts and lubricant cartridges, including the usage of refilled cartridges with non- approved or contaminated lubricants

Installation

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ATTENTION!

Before installing or disassembling the lubrication pump HTL 101, ensure that the hydraulic system of the carrier unit (the supply to the lubrication pump) is depressurized.

It is forbidden to manipulate the protection devices installed on the hydraulic unit.

If necessary, these devices may be removed temporarily during the installation of the pump.

The devices must be properly put back in place after installation.

Use only original spare parts or spare parts and cartridges authorized by Lincoln (see spare parts list, page 18 ff).

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IMPORTANT

Observe the installation guidelines and instructions of the machine/unit manufacturer when drilling and welding, as well as the specified minimum distance on vehicle/chassis frames for holes between upper/lower rim of the frame or between two bore holes.

Installation and Maintenance of Hydraulic Hoses

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ATTENTION!

The operational safety of the lubrication pump HTL 101 is only guaranteed with a professional installation and maintenance of hydraulic hoses/lines. The following points must be observed!

Hydraulic Hose/lines

- may never be subjected to torsion
- must be installed twist-free
- must not rub against metal components or edges
- are to undergo regular visual checks and exchanged in the case of wear (or at the latest, 2 years after installation)

Pay attention with non linear installations to allow for as large a bending radius as possible. Kinks are to be avoided. In constricted installation conditions use pipe elbow unions to avoid the danger of kinking behind the hose socket.

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Description

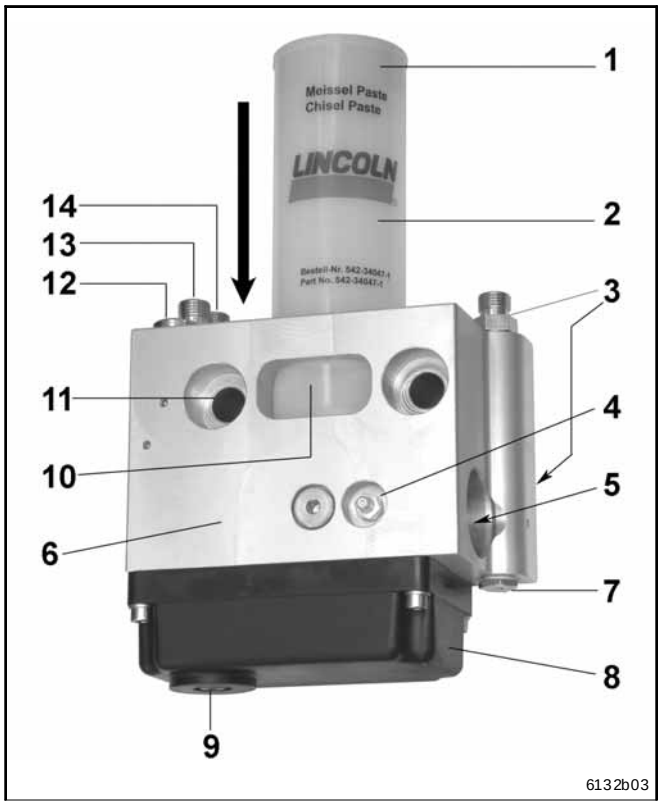

Fig. 1 Components of the Lubrication Pump HTL -101

1 - Follower piston, cartridge full
2 - Cartridge
3 - Lubricant outlet, G ¼
4 - Lubrication hydraulic fitting, for manual lubrication (M = 14 Nm ±5%)
5 - Pump element
6 - Housing
7 - Pressure relief valve 120 bar (M = 12 Nm ±5%)
8 - Housing cover
9 - Eccentric (cam)shaft
10 - Low-level position (window) of the follower piston, cartridge empty
11 - Fastening holes for M 16 bolts
12 - Cover cap for the regulating throttle valve
13 - Oil return connection R (M = 30 Nm ±5%)
14 - Oil pressure connection P (M = 30 Nm ±5%)

The Pump Model HTL 101

- is a hydraulically driven grease pump for the lubrication of hydraulic hammers or other units with an available hydraulic circuit.
- is compact and can therefore be fitted directly to the hammer or other units. Together with the carrier it forms a complete assembly.
- is driven by the hydraulic system of the carrier .
- continuously delivers lubricant to the lubrication point while the hydraulic unit is in operation and stops when the hydraulic flow stops. The lubricant quantity is adjustable via the regulating throttle valve (see Fig. 3).
- is equipped with a visual lubricant level indicator by means of the follower plate of the cartridge. If the follower plate is located in the low-level position of the cartridge 10, the cartridge must be replaced.
- is protected by means of a 120 bar pressure relief valve 7 (cartridge).
- is equipped with an easy-to exchange pump element 5.
- is equipped with a lubrication hydraulic fitting 4 for manual lubrication override (e.g. if the hydraulic system fails to operate).
- does not require supplementary directional valve.
- has three different outlets 3 & 7 for the individual grease supply connection of the hammer (unit).

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NOTE

If the lower lubricant outlet connection is used 7, the outlet fitting and the pressure relief valve must be exchanged.

If the rear outlet is used, the outlet fitting and closure plug must be exchanged.

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Working Method

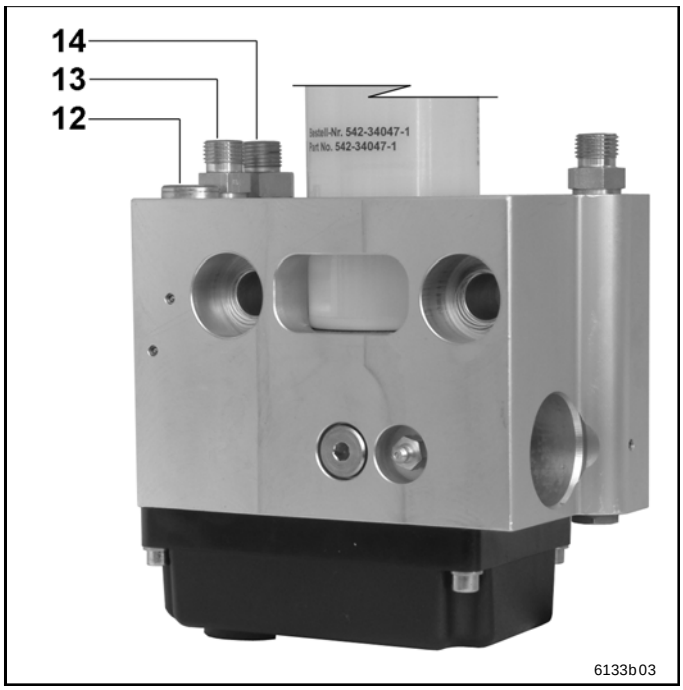

Fig. 2 Hydraulic oil connection of the pump HTL 101

➲ Connect the lubrication pump HTL 101 to the hydraulic system of the carrier by means of suitable hydraulic lines and connectors.

- The flow of hydraulic oil from the carrier is restricted (throttled) and flows:
  - via the pressure connection 14, (P, fig. 2)
  - through the filter which is installed below the pressure connection
  - to the integrated hydraulically operated stepper motor
  - and back to the hydraulic system of the carrier via the return line connection 13, R

A driving pin attached to the stepper motor activates the eccentric shaft 9 (fig. 1) via a one-way clutch. The pump element is thereby actuated and delivers lubricant.
The flow quantity of the hydraulic oil can be adjusted via the regulating throttle valve 12 (fig. 2), thereby, adjusting the output quantity of the pump accordingly. The throttle valve is notched, whereby 16 notches correspond to one complete rotation.

12 - Cover cap for throttle valve (fine restrictor)
13 - Return connection R, M 16 x 1.5
14 - Pressure connection P, M 16 x 1.5 with integrated oil strainer

Adjustment and Operation

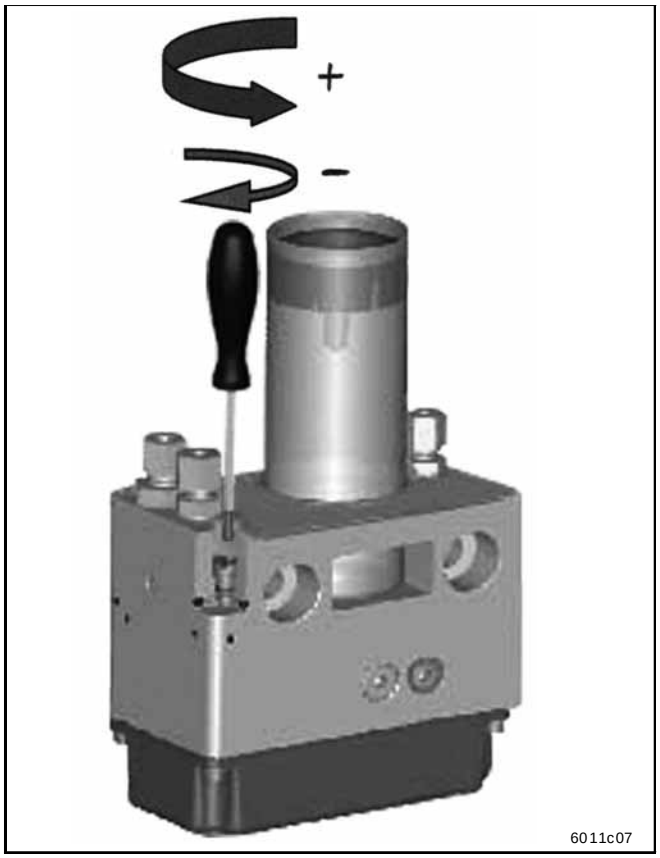

Fig. 3 Throttle valve adjustment

Basic Adjustment of the Throttle Valve

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NOTE

The eccentric shaft is factory-set to 4 rpm (output 1 cm^3/min).

➲ Adjust the required amount of lubricant by means of the output diagram (fig. 13 & chapter “Adjustment of output“).
- turning clockwise = less lubricant
- turning anticlockwise = more lubricant

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WARNING!

Risk of injury!!
When adjusting the fine restrictor make sure to switch off the hydraulic drive!

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IMPORTANT

The throttle valve may still be pressurized for a long time after switching off the hydraulic unit.
Therefore, first of all, check whether the pressure connection P (14, fig. 2) is depressurized. The eccentric shaft must not rotate anymore (see fig. 4)!

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Adjustment and Operation, continuation

Fig. 4 Monitoring of Function

Monitoring of Function

The eccentric shaft 9 (Fig. 4), located at the bottom of the pump housing cover, serves for checking the function. If it turns clockwise, the pump element is operating correctly.

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NOTE

Before switching on the hydraulic unit, check whether there is sufficient lubricant in the cartridge. If necessary, replace the cartridge (see chapter „Maintenance“, page 10).

IMPORTANT

The lubrication pump must be protected with a pressure relief valve 7.

NOTE

If the lower outlet connection is used for lubricant delivery, the pressure relief valve must be fitted to the upper outlet connection.

7 - Pressure relief valve
9 - Eccentric shaft

Pump Element

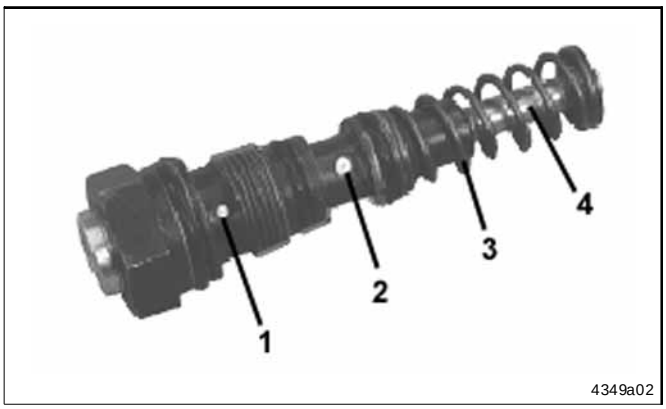

Fig. 5 Pump Element

During the operation the piston 4 (Fig. 5) sucks in lubricant from the cartridge via the suction bore hole 2 and delivers it to the connected lubrication point through the bore hole 1. An integrated check valve prevents the lubricant from returning to the cartridge.

Piston diameter, C7: 7mm

Lubricant output: .....approx. 0.22 cm³/stroke

1 - Delivery bore hole
2 - Suction bore hole
3 - Return spring
4 - Piston

Pressure Relief Valve

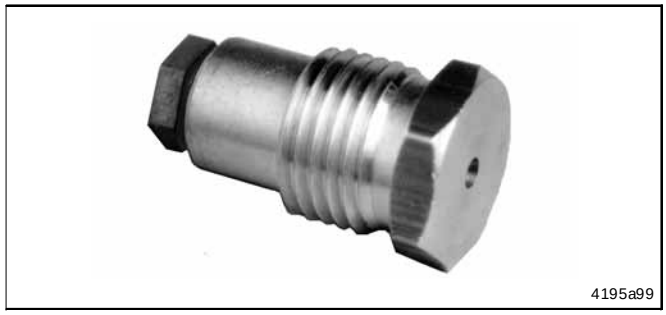

Fig. 6 Pressure relief valve (cartridge)

The pressure relief valve

- limits the pressure build-up in the system,
- opens when a pressure of 120 bar is reached.

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NOTE

If lubricant is expelled at the pressure relief valve, this indicates that there is a blockage to, or at the lubrication point.

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Maintenance

ATTENTION!

Do not perform any maintenance or repair work or replace the cartridge while the hydraulic unit is in operation.

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ATTENTION!

Before beginning with maintenance or repair work on the lubrication pump HTL 101 and before dismantling it, ensure that the hydraulic system of the carrier is depressurized.

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Lubricant Cartridge

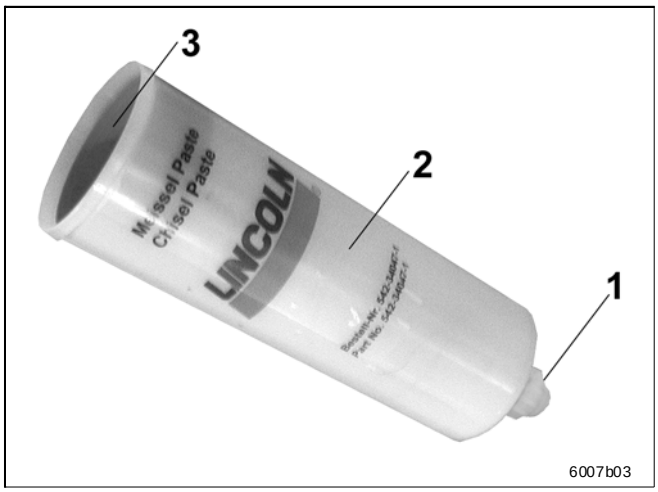

Fig. 7 Cartridge with Lubricant

Capacity.....400g
Lubricant .....up to NLGI class 2
Chisel paste .....642-37608-1[1)]
EP2 grease .....642-37609-2[1)]

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[1)]NOTE

The cartridges are not available as single units. They are only supplied in packages of 12 cartridges.

Dispose of emptied cartridges according to the legal regulations pertaining to environmental protection.

1 - Closure cap 2 - Cartridge 3 - Follower plate

First insertion of cartridge

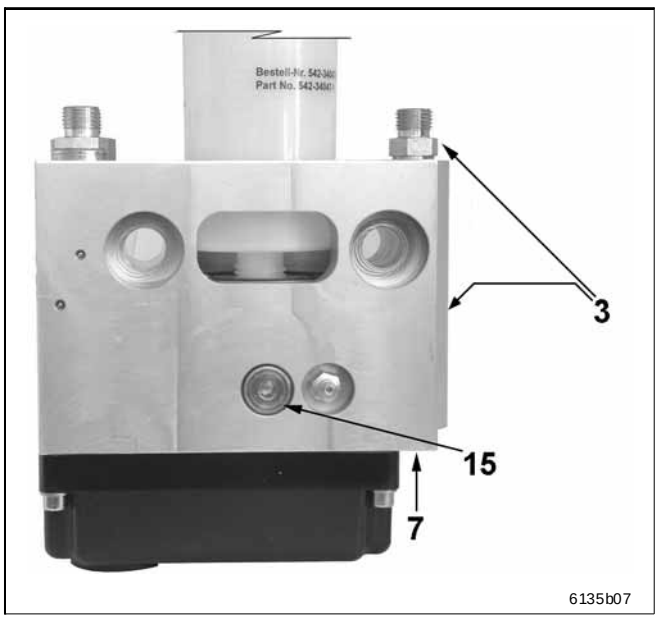

Fig. 8 Insert cartridge into the lubrication pump HTL 101

3 - Lubricant outlet, G ¼
7 - Pressure relief valve 120 bar (M = 12 Nm ±5%)
15 - Closure plug

- Lightly grease the inner o-ring
- Remove the closure cap (1, Fig. 7) from the cartridge
- Insert the cartridge in the bore hole by lightly pressing and screw it into the housing (presented as in Fig. 8) hand-tightly
- Vent housing::
  - Remove closure plug (15)
  - Press red follower piston (3, Fig. 7) into the cartridge until lubricant comes out of the open bore hole
  - Close housing with closure plug, again
- Operate the pump by switching on the hydraulic unit until lubricant flows out of the opened outlet (3)

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NOTE

The pump delivers lubricant very slowly. It may take a while before the lubricant flows out of the outlet without air bubbles.

- Connect the supply hose to the lubrication point to one of the pump outlets (3) & (7). Thread: G 1/4“
- Fill the lubricant supply hose to the lubrication point via the lubrication hydraulic fitting by means of a manually operated grease gun until the lubricant flows out at the lubrication point

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Maintenance, continuation

Cartridge Replacement

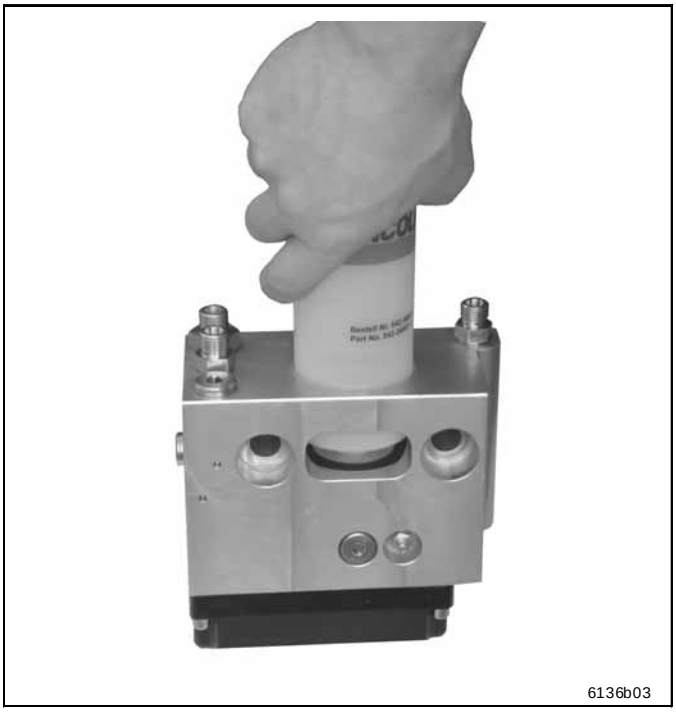

Fig. 9 Cartridge Replacement

- Switch off the hydraulic unit
- Unscrew the old cartridge
- Remove the closure cap of the new cartridge
- Screw in the new cartridge hand-tightly in the housing
  - The pump is ready for operation again

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NOTE

If afterwards the pump does not dispense lubricant immediately, vent the housing (see paragraph "vent housing", fig. 8).

Removal of Oil Strainer

Fig. 10 Cleaning the Oil Strainer
16 - Oil strainer

The oil strainer should be cleaned every 2000 operating hours. To do this, proceed as follows:

- Depressurize hose lines of the hydraulic system on the carrier device.
- Remove the pressure line to the lubrication pump HTL 101.
- Unscrew the oil strainer and clean it.

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Technical Data

Ratings

Lubrication Pump HTL 101

Lubrication output:..... 0.22 cm³/stroke
Max. operating pressure (lubricant)
- Hydraulic hammer..... 120 bar
- with metering device..... 270 bar
Admissible operating temperature[1)]..... -25°C to 80°C
Ratio.....1 : 1.65

Factory Output Settings

Speed (revolutions): ..... 4 rpm
max. Hydraulic pressure:..... 250 bar
min. Hydraulic pressure:..... 40 bar

Standard Fitting Connections

Oil - Pressure (P) ..... M 16 x 1.5 mm
Oil - Return (R)..... M 16 x 1.5 mm
Lubricant outlet ..... G 1/4“

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[1)]NOTE

The minimum operating temperature depends on the pumpability of the lubricants. For Lincoln chisel pastes, it is -25°C. Observe the manufacturer's specifications for standard greases.

Pressure Diagram: Ratio Comparison

The following pressure diagram depicts the relationship between the inlet pressure of the hydraulic system and the maximum outlet pressure of the lubrication pump with closed outlet or with a blockage. The maximum outlet pressure was determined with an EP 2 grease at room temperature.

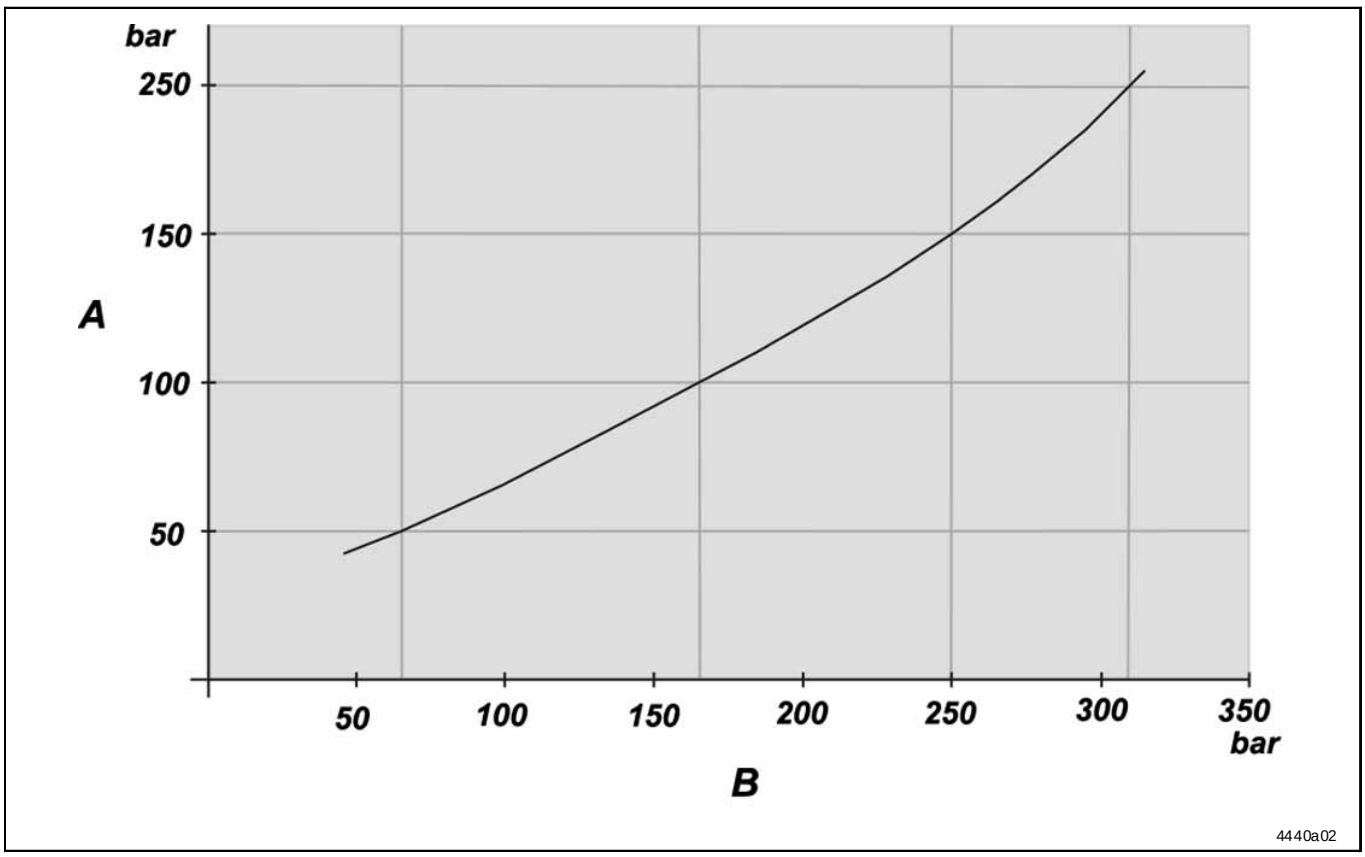

Fig. 11 Pressure diagram

A - Oil pressure: Hydraulic System (Inlet)
B - Delivery Pressure: Lubricant Outlet

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Technical Data, continuation

Dimensions

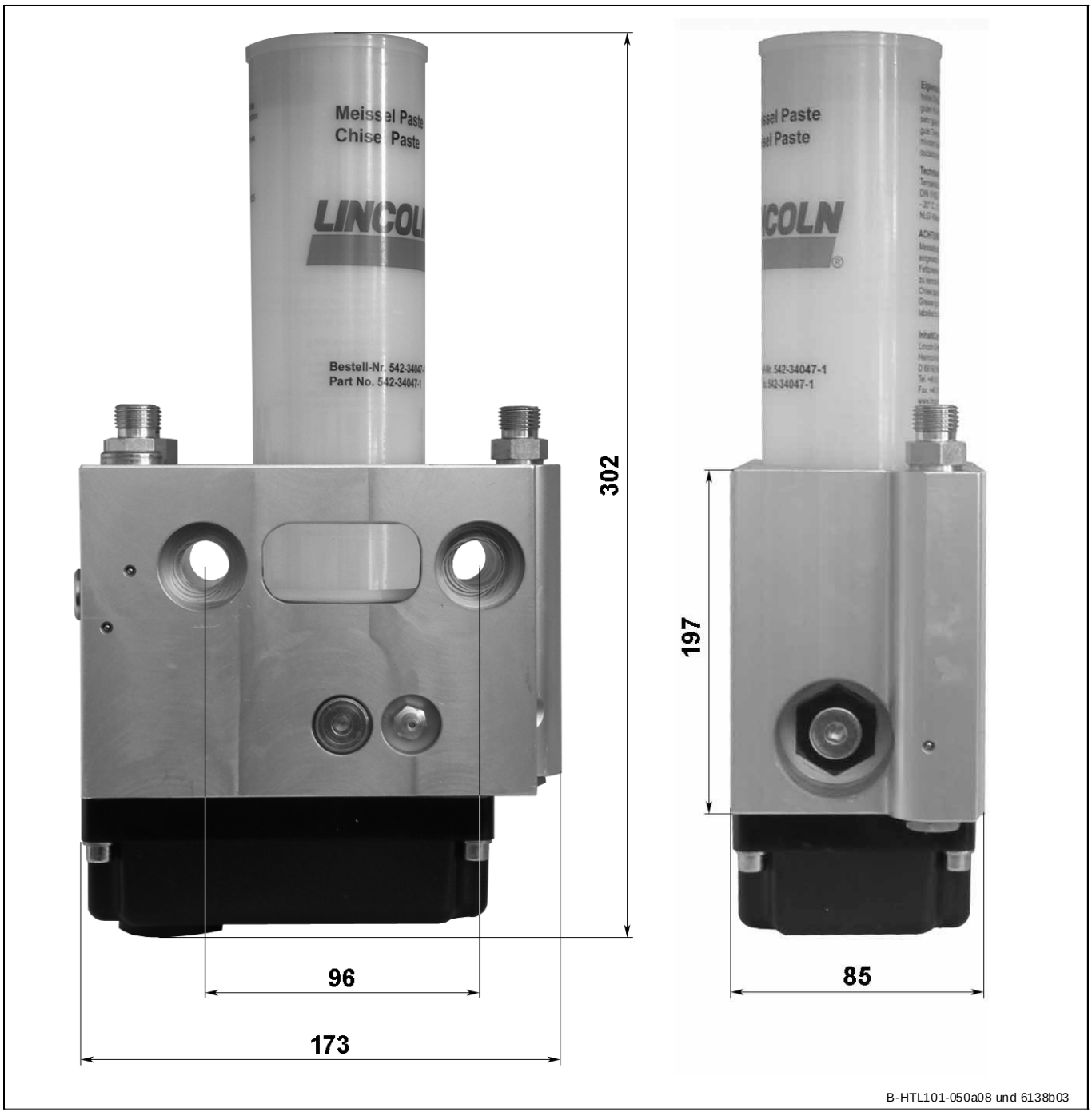

Fig. 12 Dimensions of the Hydraulic Lubrication Pump HTL 101 (all dimensions in mm)

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Technical Data, continuation

Flow Rate Diagram

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WARNING!

Risk of injury!
Before adjusting the fine restrictor make sure to switch off the hydraulic drive!

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IMPORTANT

The throttle valve may still be pressurized for a long time after switching off the hydraulic unit.

Therefore, first of all, check whether the pressure connection P (14, fig. 2) is depressurized. The eccentric shaft must not rotate anymore (see fig. 4)!

Lubricant Output of the HTL 101 (at 100 bar back-pressure and 60 to 80 °C operating temperature)

(see version P, pos. 13, pages 22 and 23)

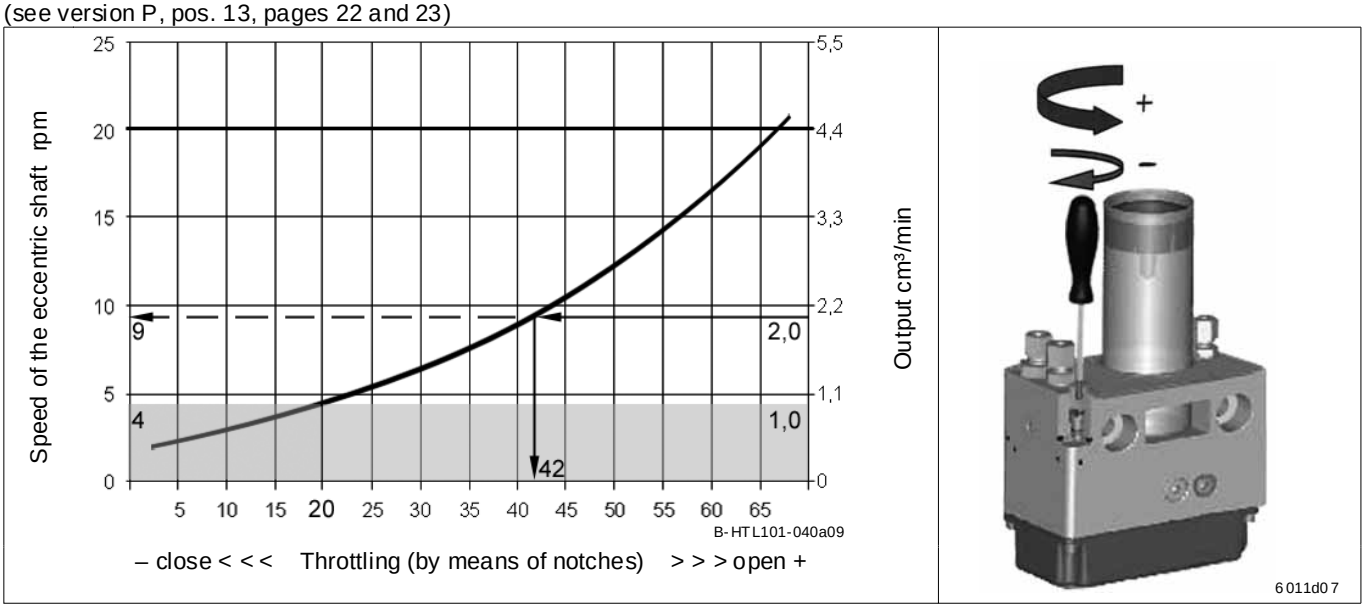

Fig. 13 Flow rate diagram

Average output on medium-sized hydraulic hammers

From output diagram fig. 13 the adjustment of the throttle valve can be determined in dependency of the lubricant output.

Max. speed of the eccentric shaft ..... 20 rpm
Max. output ..... 4.4 cm³/min
Notches per throttle revolution 16

Factory-setting:
Position of the throttle valve (fig. 13) ..... 20 notches
Speed of eccentric shaft ..... approx. 4 rpm
Output ..... approx. 1 cm³/min

The integrated pump element supplies 0.22 cm³ of lubricant per stroke. It is driven by the eccentric shaft (1 stroke / revolution). The speed of the eccentric shaft is determined by the position of the throttle valve.
The throttle valve is notched, whereby 16 notches correspond to one complete rotation.

Adjusting the output:

- ➲ Open the cover cap of the throttle valve 12 (fig. 2)
- ➲ Close the throttle by turning it clockwise.
- ➲ Determine the number of notches corresponding to the required output by means of the output diagram (fig. 13).
- ➲ Example:
  - required output ..... 2 cm^3/min
  - notches ..... approx. 42
  - speed of eccentric shaft ..... approx. 9 rpm
- ➲ Open the throttle counterclockwise until you have reached the number of notches.
- ➲ Check the output.
- · If necessary, adapt the output proceeding from this throttle position:
  - turning clockwise ..... less lubricant
  - turning anticlockwise ..... more lubricant

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Technical Data, continuation

Hydraulic Circuit

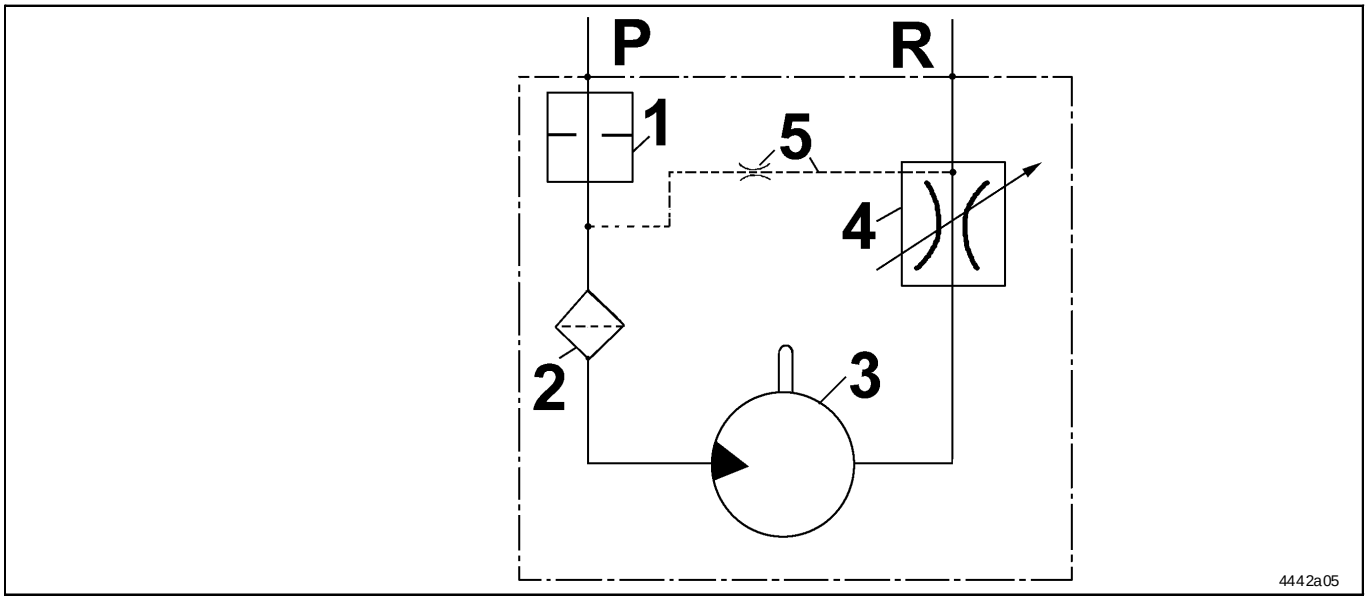

Fig. 14 Hydraulic Circuit HTL 101

1 - Screen 2 - Filter 3 - Stepper motor 4 - Throttle, adjustable 5 - By-pass for warming up

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Note:

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Troubleshooting

Fault: Pump does not deliver the lubricant	
Cause:	**Remedy:**
· Cartridge empty	➲ Replace the cartridge, see page 11.
· Lubricant supply blocked	➲ Check the cartridge.
· No oil pressure supply	➲ Check the hydraulic system and repair it. ➲ Check the tube and hose lines and replace them.
· Air entrapments in the suction area of the cartrigde	➲ Vent housing, see page 10 „First Instertion of cartridge“.

Fault: Lubricant quantity too low	
Cause:	**Remedy:**
· Throttle not adjusted correctly	➲ Turn the throttle anticlockwise by 1 to 2 notches (more lubricant will flow out), see Fig. 3.

Fault: Lubricant quantity too high	
Cause:	**Remedy:**
· Throttle not adjusted correctly	➲ Turn the throttle clockwise by 1 to 2 notches (less lubricant will flow out), see Fig. 3.

Fault: Lubricant leaking at the cartridge inlet	
Cause:	**Remedy:**
· Leakage	➲ Check the sealing ring in the pump unit and replace it if necessary. ➲ Check wether the cartridge is threaded correctly (hand-tight seat).

Fault: Lubricant leaking at the grease outlet	
Cause:	**Remedy:**
· Leakage	➲ Check the fittings and retighten them if necessary.

Fault: Oil pressure leaking at the hydraulic system	
Cause:	**Remedy:**
· Leakage	➲ Check the fittings and retighten them if necessary.

Tab. 1 Troubleshooting

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Components and Parts List

Exploded drawing, model H

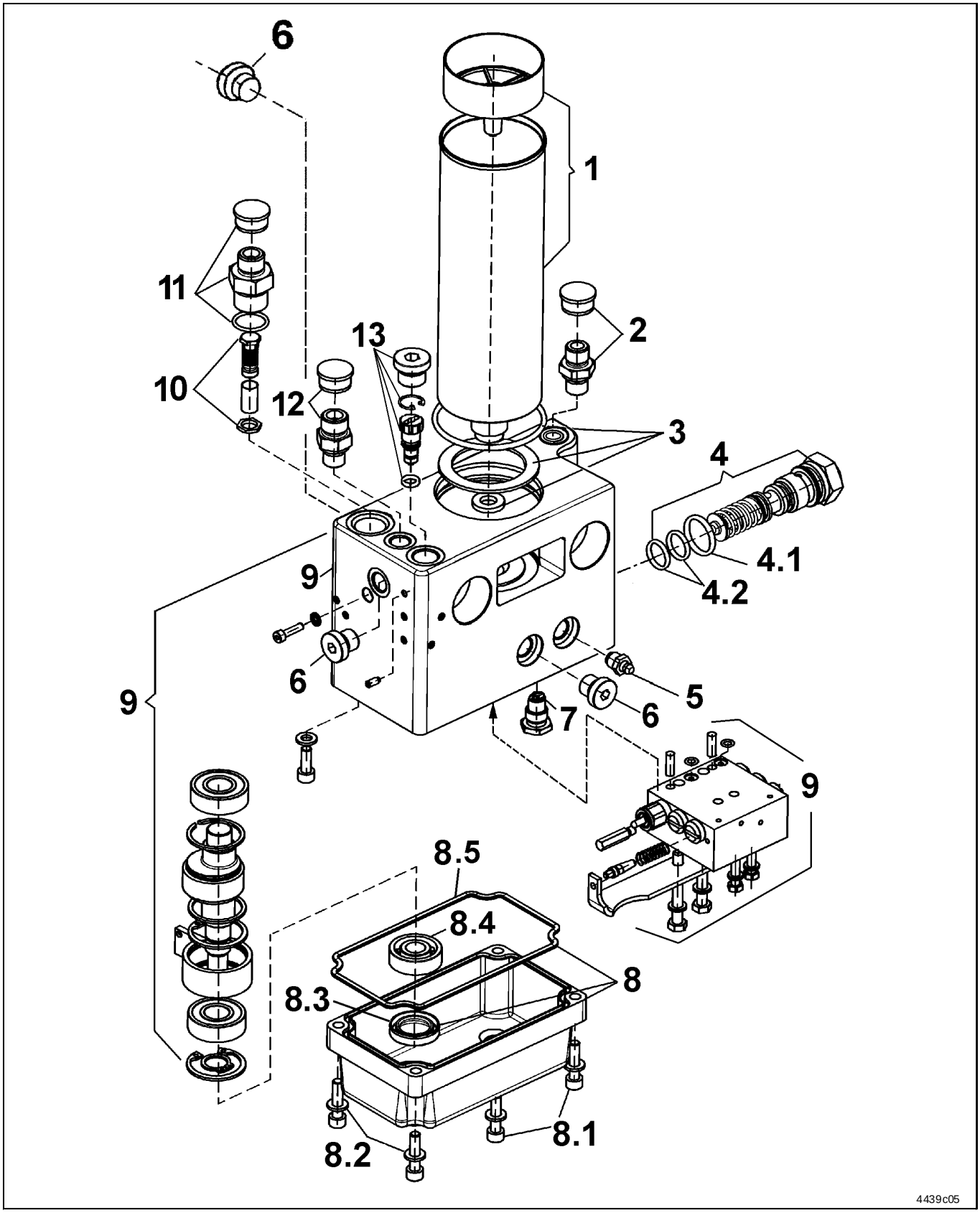

Fig. 15 Exploded drawing, model H (see identification plate)

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Components and Parts List, continuation

Parts List, model H

Item	Description	Qty.	Part-Number
1	Cartridge with chisel paste, 400 g	12	642-37608-1
2	Connection fitting XGE 6 - SG ¼ AC	1	223-10055-5
3 [1)]	Kit of seals	1	542-34079-1
4	Pump element C 7	1	642-29086-1
4.1	O-ring 19.2 x 3	1	219-13053-6
4.2	O-ring 14.2 x 2.5	2	219-13053-5
5	Hydraulic fitting	1	251-14109-6
6	Closure plug G ¼	3	223-13702-1
7	Valve body, 120 bar	1	235-14343-5
8	Housing cover, assy.	1	542-34079-4
8.1	Hex. head screw, M6 x 18 C	4	201-13668-1
8.2	Shim St A 6.4 C	4	209-13011-5
8.3	Package ring 12 x 30 x 7	1	220-12229-8
8.4	Bearing	1	250-14064-6
8.5	Sealing ring 122.7 x 2.5	1	442-70146-1

Item	Description	Qty.	Part-Number
9 [2)]	Pump housing, assy.	1	642-40950-1
10	Filter, assy.	1	528-32215-1
11	Oil inlet fitting M16 x 1.5 x M20 x 1.5 A, 8 S O-ring	1 1	304-19893-1 219-12451-3
12	Oil outlet fitting XGE 85 G¼ A A3C	1	223-10055-4
13	Throttle valve, assy.	1	542-34079-2

[1)] see **IMPORTANT** note**:**

6001a02

IMPORTANT

Please use Loctite 403 to glue in flat packing (item 3).

[2)] see **NOTE:**

6001a02

NOTE

The marked parts are glued into the housing for reasons of vibration. If dismantled they may be destroyed. If so, replace pump (item 9) completely.

Tab. 2 Parts list, model H (see identification plate)

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Components and Parts List, continuation

Exploded drawing, model N

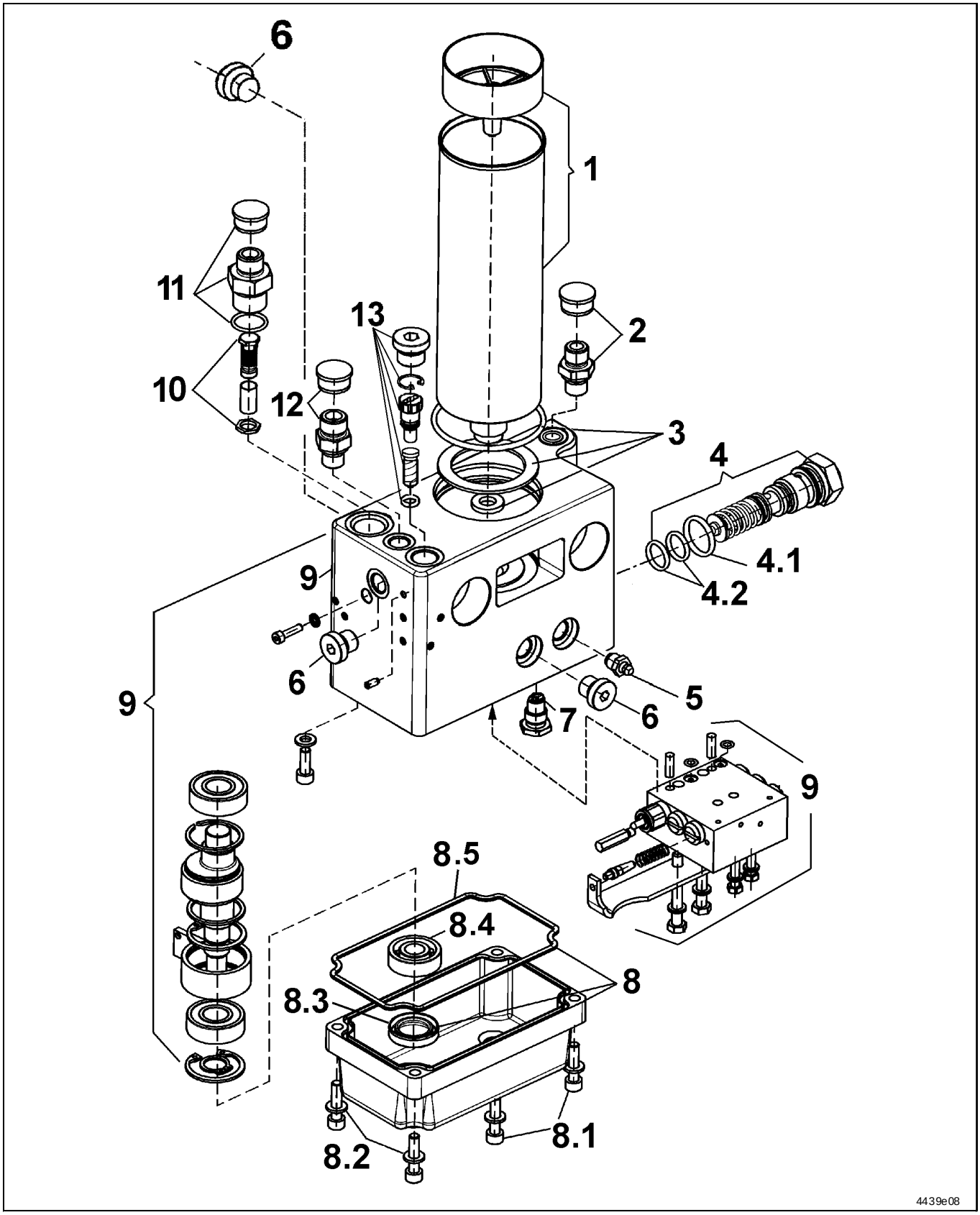

Fig. 16 Exploded drawing, model N (see identification plate)

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Components and Parts List, continuation

Parts List, model N

Item	Description	Qty.	Part-Number
1	Cartridge with chisel paste, 400 g	12	642-37608-1
2	Connection fitting XGE 6 - SG ¼ AC	1	223-10055-5
3 [1)]	Kit of seals	1	542-34079-1
4	Pump element C 7	1	642-29086-1
4.1	O-ring 19.2 x 3	1	219-13053-6
4.2	O-ring 14.2 x 2.5	2	219-13053-5
5	Hydraulic fitting	1	251-14109-6
6	Closure plug G ¼	3	223-13702-1
7	Valve body, 120 bar	1	235-14343-5
8	Housing cover, assy.	1	542-34079-4
8.1	Hex. head screw, M6 x 18 C	4	201-13668-1
8.2	Shim St A 6.4 C	4	209-13011-5
8.3	Package ring 12 x 30 x 7	1	220-12229-8
8.4	Bearing	1	250-14064-6
8.5	Sealing ring 122.7 x 2.5	1	442-70146-1

Item	Description	Qty.	Part-Number
9 [2)]	Pump housing, assy.	1	642-40950-1
10	Filter, assy.	1	528-32215-1
11	Oil inlet fitting M16 x 1.5 x M20 x 1.5 A, 8 S O-ring	1 1	304-19893-1 219-12451-3
12	Oil outlet fitting XGE 85 G¼ A A3C	1	223-10055-4
13	Throttle valve, assy.	1	542-34079-9

[1)] see **IMPORTANT** note**:**

6001a02

IMPORTANT

Please use Loctite 403 to glue in flat packing (item 3).

[2)] see **NOTE:**

6001a02

NOTE

The marked parts are glued into the housing for reasons of vibration. If dismantled they may be destroyed. If so, replace pump (item 9) completely.

Tab. 3 Parts list, model N (see identification plate)

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Components and Parts List, continuation

Exploded drawing, model P

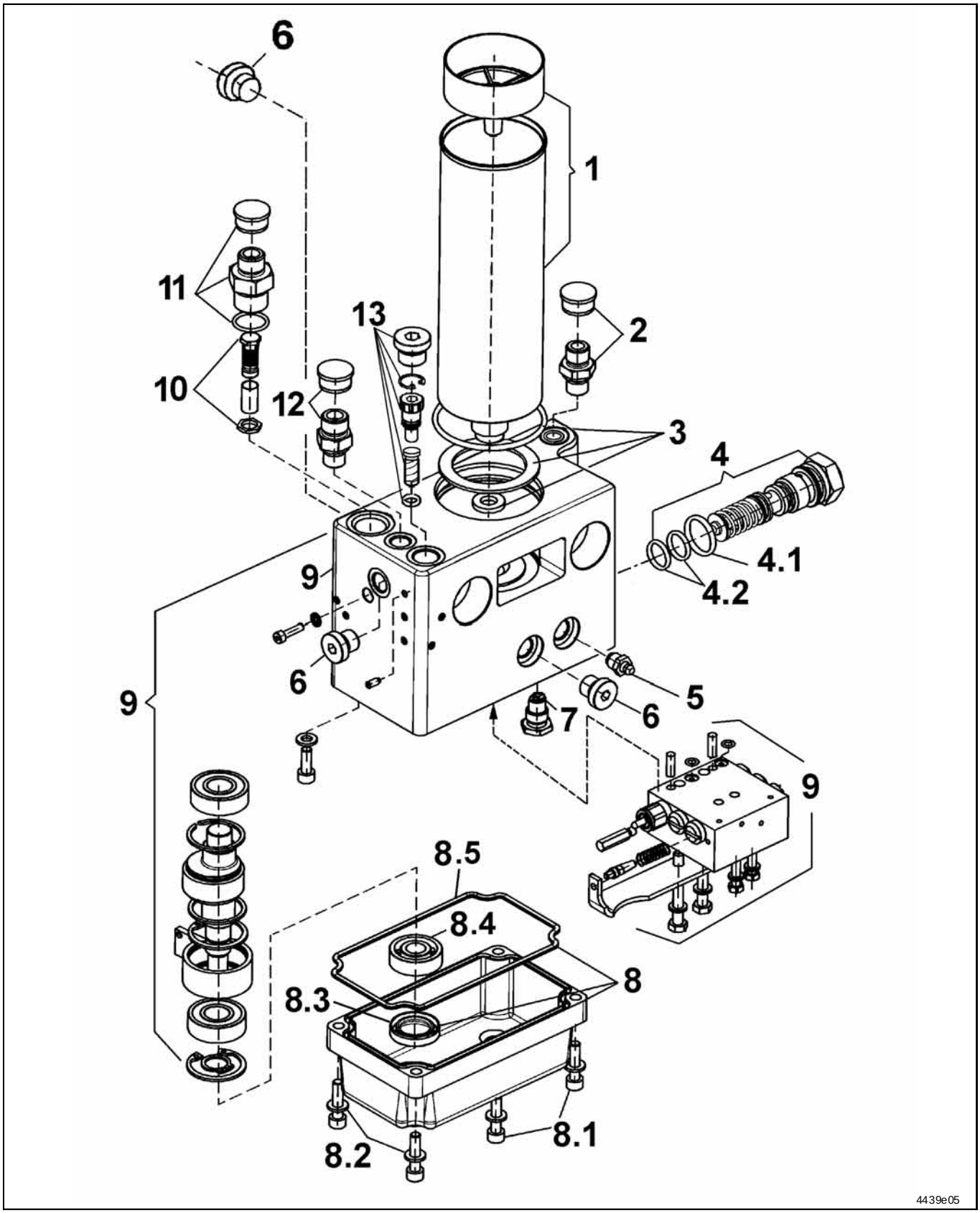

Fig. 17 Exploded drawing, model P (see identification plate)

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Components and Parts List, continuation

Parts List, model P

Item	Description	Qty.	Part-Number
1	Cartridge with chisel paste, 400 g	12	642-37608-1
2	Connection fitting XGE 6 - SG ¼ AC	1	223-10055-5
3 [1)]	Kit of seals	1	542-34079-1
4	Pump element C 7	1	642-29086-1
4.1	O-ring 19.2 x 3	1	219-13053-6
4.2	O-ring 14.2 x 2.5	2	219-13053-5
5	Hydraulic fitting	1	251-14109-6
6	Closure plug G ¼	3	223-13702-1
7	Valve body, 120 bar	1	235-14343-5
8	Housing cover, assy.	1	542-34079-4
8.1	Hex. head screw, M6 x 18 C	4	201-13668-1
8.2	Shim St A 6.4 C	4	209-13011-5
8.3	Package ring 12 x 30 x 7	1	220-12229-8
8.4	Bearing	1	250-14064-6
9.5	Sealing ring 122.7 x 2.5	1	442-70146-1

Item	Description	Qty.	Part-Number
9 [2)]	Pump housing, assy.	1	642-40950-1
10	Filter, assy.	1	528-32215-1
11	Oil inlet fitting M16 x 1.5 x M20 x 1.5 A, 8 S O-ring	1 1	304-19893-1 219-12451-3
12	Oil outlet fitting XGE 85 G¼ A A3C	1	223-10055-4
13	Throttle valve, assy.	1	542-34281-1

[1)] see **IMPORTANT** note**:**

6001a02

IMPORTANT

Please use Loctite 403 to glue in flat packing (item 3).

[2)] see **NOTE:**

6001a02

NOTE

The marked parts are glued into the housing for reasons of vibration. If dismantled they may be destroyed. If so, replace pump (item 9) completely.

Tab. 4 Parts list, model P (see identification plate)

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Components and Parts List, continuation

Exploded drawing, model R

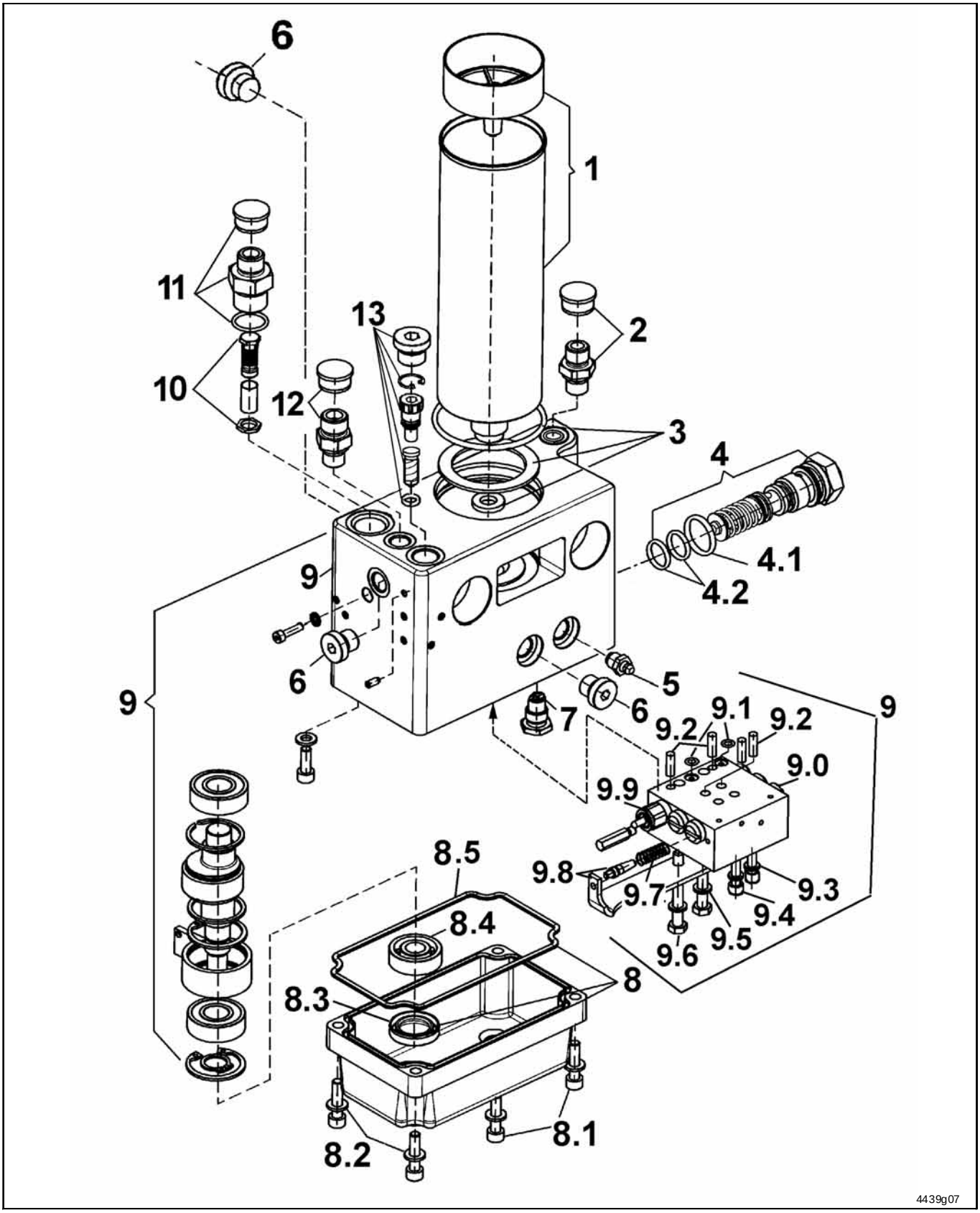

Fig. 18 Exploded drawing, model R (see identification plate)

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Components and Parts List, continuation

Parts List, model R

Item	Description	Qty.	Part-Number
1	Cartridge with chisel paste, 400 g	12	642-37608-1
2	Connection fitting XGE 6-SG ¼ AC	1	223-10055-5
3 [1)]	Kit of seals	1	542-34079-1
4	Pump element C7	1	642-29086-1
4.1	O-ring 19,2x3	1	219-13053-6
4.2	O-ring 14,2x2,5	1	219-13053-5
5	Hydraulic fitting	1	251-14109-6
6	Closure plug G ¼	3	223-13702-1
7	Valve body, 120 bar	1	235-14343-5
8	Housing cover, assy.	1	542-34079-4
8.1	Screw, hex-socket M6x18 C	4	201-13668-1
8.2	Washer St. A 6,4 C	4	209-13011-5
8.3	Package ring 12x30x7	1	220-12229-8
8.4	Bearing	1	250-14064-6
8.5	Sealing ring 122,7x2,5	1	442-70146-1

Item	Description	Qty.	Part-Number
9	Pump, assy.	1	642-40950-1
9.0	Stepper motor, SSVV6-K, assy.	1	619-29090-1
9.1	O-ring 5,0x1,5	2	219-12222-2
9.2	Heavy duty dowel SG 5,0x16	4	215-10560-3
9.3	Safety washer 5,4 C, self-locking	2	211-10213-2
9.4 [2)]	Screw, hex-socket 10.9 M5x40 C	2	201-10431-6
9.5	Safety washer 6,5 C, self-locking	2	211-10213-1
9.6	Screw 10.9 M6x50 A3C	2	200-10078-3
9.7	Spring DF50-3 DA 8x0,8xx28,8	2	218-10141-7
9.8	Bracket, assy. with spring	1	542-34079-7
9.9	Coupling nut M11x1x5,0 F	1	519-32307-1
10	Filter, assy.	1	528-32215-1
11	Oil inlet fitting M16x1,5xM20x1,5 A, 8S O-ring	1 1	304-19893-1 219-12451-3
12	Oil outlet fitting XGE 85 G ¼ A A3 C	1	223-10055-4
13	Throttle valve	1	542-34281-1

Tab. 5 Parts list, model R (see identification plate)

[1)] see **IMPORTANT** note**:**

6001a02

IMPORTANT

Please use Loctite 403 to glue in flat packing (item 3).

[2)] see **IMPORTANT** note**:**

6001a02

IMPORTANT

Please use Loctite 274 to mount screw, hex-socket (item 9.4).

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Accessories

Hydraulic tubes

6001a02

NOTE

For applications of pump HTL 101 on hammers, use hoses with special fittings that resist the high vibrations during the hammer's operation. Standard hose fittings are not suitable for this type of application as they would spoil within a short period of time.

Our accessories comprise special hoses (DN 6 Type 2040N-04V00 with black outside coating) in various lengths for the connection of pump HTL 101 (oil pressure and oil return) to the hydraulic system of a hammer. The connecting fittings are made of high-tensile special steel and are provided with fittings DKOS 8-S-M16 x 1.5 1 C9PX-8-04S.

The following hoses can be ordered:

Part no.	Kind of connection, both sides	Tube length in mm	Material of tube
666-34169-1	DN 6 x 420 DKOS / DKOS 8 – S	420	HD DN 6 2040 N-04V00
666-34169-2	DN 6 x 430 DKOS / DKOS 8 – S	430	HD DN 6 2040 N-04V00
666-34169-3	DN 6 x 450 DKOS / DKOS 8 – S	450	HD DN 6 2040 N-04V00
666-34169-4	DN 6 x 470 DKOS / DKOS 8 – S	470	HD DN 6 2040 N-04V00
666-34169-5	DN 6 x 480 DKOS / DKOS 8 – S	480	HD DN 6 2040 N-04V00
666-34169-6	DN 6 x 490 DKOS / DKOS 8 – S	490	HD DN 6 2040 N-04V00
666-34169-7	DN 6 x 500 DKOS / DKOS 8 – S	500	HD DN 6 2040 N-04V00
666-34169-8	DN 6 x 540 DKOS / DKOS 8 – S	540	HD DN 6 2040 N-04V00
666-34169-9	DN 6 x 550 DKOS / DKOS 8 – S	550	HD DN 6 2040 N-04V00
666-34170-1	DN 6 x 560 DKOS / DKOS 8 – S	560	HD DN 6 2040 N-04V00
666-34170-2	DN 6 x 600 DKOS / DKOS 8 – S	600	HD DN 6 2040 N-04V00
666-34170-3	DN 6 x 610 DKOS / DKOS 8 – S	610	HD DN 6 2040 N-04V00
666-34170-4	DN 6 x 620 DKOS / DKOS 8 – S	620	HD DN 6 2040 N-04V00
666-34170-5	DN 6 x 650 DKOS / DKOS 8 – S	650	HD DN 6 2040 N-04V00
666-34170-6	DN 6 x 700 DKOS / DKOS 8 – S	700	HD DN 6 2040 N-04V00
666-34170-7	DN 6 x 750 DKOS / DKOS 8 – S	750	HD DN 6 2040 N-04V00
666-34170-8	DN 6 x 800 DKOS / DKOS 8 – S	800	HD DN 6 2040 N-04V00
666-34170-9	DN 6 x 850 DKOS / DKOS 8 – S	850	HD DN 6 2040 N-04V00
666-34171-1	DN 6 x 900 DKOS / DKOS 8 – S	900	HD DN 6 2040 N-04V00
666-34171-2	DN 6 x 950 DKOS / DKOS 8 – S	950	HD DN 6 2040 N-04V00
666-34171-3	DN 6 x 1000 DKOS / DKOS 8 – S	1000	HD DN 6 2040 N-04V00
666-34171-4	DN 6 x 1250 DKOS / DKOS 8 – S	1250	HD DN 6 2040 N-04V00
666-34171-5	DN 6 x 1500 DKOS / DKOS 8 – S	1500	HD DN 6 2040 N-04V00

Tab. 6 Hydraulic tubes

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Original Language

D	GB	F	E	I
EG- Einbauerklärung	**EC Declaration of incorporation**	**Déclaration CE d'incorporation**	**Declaración CE de incorporación**	**Dichiarazione CE di incorporazione**
Hiermit erklären wir, dass die Bauart von	*Herewith we declare that the model of*	*Par la présente, nous déclarons que le produit ci-dessous*	*Por la presente, declaramos que el modelo suministrado*	*Si dichiara che il prodotto da noi fornito*

Hydraulic Operated Lubrication Pump HTL101

in der von uns gelieferten Ausführung zum Einbau in eine Maschine bestimmt ist und dass ihre Inbetriebnahme solange untersagt ist, bis festgestellt wurde, dass die Maschine, in die das o. g. Produkt eingebaut werden soll, den Bestimmungen aller einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen entspricht, einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen. Der Hersteller verpflichtet sich, technische Dokumente (gem. Anhang VII Teil B) bei begründeter Anfrage zum o. g. Produkt einzelstaatlichen Stellen in gedruckter Form zur Verfügung zu stellen.	*in the supplied version is intended to be incorporated into machinery and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the relevant fundamental requirements on health and safety, including all modifications of this directive valid at the time of the declaration. The manufacturer undertakes to make available any technical documents in printed version (following Annex VII Part B) to subnational authorities in the case of reasonable request regarding the above mentioned product.*	*dans la version dans laquelle nous le livrons, est destiné à être installé sur une machine et que sa mise en service est interdite tant qu'il n'aura pas été constaté que la machine sur laquelle le produit mentionné ci-dessus doit être installé est conforme aux réglementations régissant toutes les exigences fondamentales de sécurité et celles relatives à la santé, y compris les amendements en vigueur au moment de la présente déclaration. Le fabricant s'engage, en cas de demande justifiée, à fournir sous forme écrite aux organismes nationaux respectifs les documents techniques (suivant Annexe VII, Partie B) relatifs au produit ci-dessus.*	*en la versión suministrada es destinada a ser incorporada en una máquina y que su puesta en servicio está prohibida antes de que la máquina en la que vaya a ser incorporada haya sido declarada conforme a las disposiciones de los requisitos pertinentes y fundamentales de salud y seguridad en su redacción vigente en el momento de instalación. El fabricante se obliga a hacer disponible documentos técnicos (según anexo VII parte B) en versión imprimida a entes uniestatales a petición fundada referente al producto arriba mencionado.*	*nella versione da noi fornita è destinato all'installazione in una macchina e che la relativa messa in esercizio resta vietata fino all'avvenuto accertamento della conformità della macchina nella quale il suddetto prodotto deve essere installato con tutti i requisiti basilari prescritti in termini di sicurezza e di salute, incluse le relative modifiche vigenti al momento della dichiarazione. Il costruttore si impegna a mettere a disposizione la documentazione tecnica (ai sensi dell'Allegato VII partel B) in forma scritta relativa al summenzionato prodotto dietro richiesta motivata presso le singole sedi nazionali.*
Angewendete harmonisierte Normen, insbesondere:	*Applied harmonized standards in particular:*	*Normes harmonisées, notamment :*	*Normas armonizadas utilizadas, particularmente:*	*Norme armonizzate applicate in particolare:*
Maschinenrichtlinie 2006/42/EG	**Machinery Directive 2006/42/EC**	**Directive machines 2006/42/CE**	**Directiva de máquinas 2006/42/CE**	**Direttiva Macchine 2006/42/CE**
DIN EN ISO 12100 – Teil 1 & 2 **Sicherheit von Maschinen** *Grundbegriffe, allgemeine Gestaltungsleitsätze*	**– Part 1 & 2** **Safety of machinery** *Basic terms, general design guidelines*	**– Parties 1 & 2** **Sécurité de machines** *Notions fondamentales, directives générales d'élaboration*	**– Parte 1 & 2** **Seguridad de máquinas** *Términos básicos, axiomas generales de diseño*	**– Parte 1 e 2** **Sicurezza delle macchine** *Concetti basilari, principi guida generali*
		DIN EN 908		
Pumpen und Pumpengeräte für Flüssigkeiten *Allgemeine sicherungstechnische Anforderungen*	**Pumps and pump units for liquids** *General safety requirements*	**Pompes et groupes de pompes pour liquides** *Exigences en matière de sécurité technique*	**Bombas y equipos de bombas para líquidos** *Prescripciones generales referente a la seguridad*	**Pompe e dispositivi di pompaggio per liquidi** *Requisiti generali di sicurezza tecnica*

Walldorf, Nov 30, 2009, Dr.-Ing. Z. Paluncic
Director Research & Development

Lincoln GmbH
Heinrich-Hertz-Str. 2-8
D-69169 Walldorf

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